

Report Information
from Dialog DataStar



Table of Contents

DataStar Documents.....	1
Color images' segmentation using scale space filter and Markov random field.....	1
Color images segmentation using scale space filter and Markov random field.....	2
Search Strategy.....	4

Color images' segmentation using scale space filter and Markov random field.**Dialog eLinks**Full text options **HSP TO Full Text Retrieval Options****Accession number & update**

0004329058 20070101.

Source

Pattern Recognition, [Pattern-Recognit-UK], Oct. 1992, vol. 25, no. 10, p. 1217-29, 18 refs, CODEN: PTNRA8, ISSN: 0031-3203, UK.

Author(s)

Chung-Lin-Huang, Tai-Yuen-Cheng, Chaur-Chin-Chen.

Author affiliation

Chung-Lin Huang, Tai-Yuen Cheng, Dept. of Electr. Eng., Nat. Tsing-Hua Univ., Hsin-Chu, Taiwan.

Abstract

A hybrid method is presented that combines the scale space **filter** (SSF) and Markov random field (MRF) for color image **segmentation**. The fundamental idea of the SSF is to use the convolution of Gaussian functions and an image-histogram to generate a scale space image and then find the proper interval bounded by the local extrema of the derivatives. The Gaussian function is with zero mean and varied standard deviation. Using the SSF the different scaled histogram is separated into intervals corresponding to peaks and valleys. The MRF makes use of the property that each pixel in an image has some relationship with other pixels. The basic construction of an MRF is a joint probability given the original data. The original data is the image that is obtained from the source and the result is called the label image. Because the MRF needs a **number of segments** before it converges to the global minimum, the SSF is exploited to do coarse **segmentation** and then MRF is used to do fine **segmentation** of the images. Basically, the former is histogram-based **segmentation**, whereas the latter is neighborhood-based **segmentation**.

Descriptors**IMAGE-SEGMENTATION; MARKOV-PROCESSES; SIMULATED-ANNEALING; SPATIAL-FILTERS.****Classification codes**

B6140C Optical-information-image-and-video-signal-processing*;
 B0240Z Other-topics-in-statistics;
 B0260 Optimisation-techniques;
 C1250 Pattern-recognition*;
 C1140Z Other-topics-in-statistics;
 C1180 Optimisation-techniques.

Keywords

spatial-filters; simulated-annealing; Gibbs-sampling; scale-space-**filter**; Markov-random-field; **color**-image-segmentation; convolution; Gaussian-functions; image-histogram; **coarse**-segmentation; fine-**segmentation**; **neighborhood**-based-segmentation.

Treatment codes

T Theoretical-or-mathematical.

Language

English.

Publication type

Journal-paper.

Availability

CCCC: 0031-3203/92/\$5.00+.00.

Publication year

1992.

Publication date

19921000.

Edition

1993003.

Copyright statement

Copyright 1993 IEE.

((c) 2008 The Institution of Engineering and Technology)

Color images segmentation using scale space filter and Markov random field.**Dialog eLinks**

Full text options

USPTO Full Text Retrieval Options**Accession number & update**

0004174950 20070101.

Conference informationIntelligent Robots and Computer Vision X: Algorithms and Techniques,
Boston, MA, USA, 11–13 Nov. 1991.

Sponsor(s): SPIE.

SourceProceedings of the SPIE – The International Society for Optical Engineering,
{Proc–SPIE–Int–Soc–Opt–Eng–USA}, 1992, vol. 1607, p. 358–68, 11 refs, CODEN: PSISDG, ISSN:
0277–786X, USA.**Author(s)**

Tai–Yuen–Cheng, Chung–Lin–Huang.

Author affiliation

Tai–Yuen Cheng, Chung–Lin Huang, Dept. of Electr. Eng., Nat. Tsing–Hua Univ., Hsin–Chu, Taiwan.

Abstract

The paper presents a hybrid method that combines the scale space **filter** (SSF) and Markov random field (MRF) for color image **segmentation**. Using the scale space **filter**, the authors separate the different scaled histogram to intervals corresponding to peaks and valleys. The basic construction of MRF is a joint probability given the original data. The original data is the image that the authors obtained from the source and the result is called the label image. Because the MRF needs the **number of segments** before it converges to the global minimum, they exploit the scale space **filter** to do coarse **segmentation** and then use MRF to do fine **segmentation** of the images. Finally, they compare the experimental results obtained from using SSF only, or combined with MRF using iterated conditional mode (ICM), and Gibbs sampling.

Descriptors

COLOUR; MARKOV–PROCESSES; PATTERN–RECOGNITION; PICTURE–PROCESSING.

Classification codes

B6140C Optical–information–image–and–video–signal–processing*;

C1250 Pattern–recognition*;

C1260 Information–theory.

Keywords

scale–space–filter; Markov–random–field; **color**–image–segmentation;
joint–probability; **coarse**–segmentation; **fine**–segmentation; iterated–
conditional–mode; Gibbs–sampling.

Treatment codes

P Practical.

Language

English.

Publication type

Conference–paper; Journal–paper.

Availability

CCCC: 0 8194 0744 5/92/\$4.00.

Publication year

1992.

Publication date

19920000.

Edition

1992029.

Copyright statement

Copyright 1992 IEE.

((c) 2008 The Institution of Engineering and Technology)

Search Strategy

No.	Database	Search term	Info added since	Results
1	INZZ	segmentation	unrestricted	49376
2	INZZ	size NEAR segment\$1 OR (number OR quantity) NEAR segment\$1	unrestricted	3279
3	INZZ	blur\$4 OR smooth\$4 OR filter\$3	unrestricted	440313
4	INZZ	1 AND 2 AND 3	unrestricted	52

Saved: 26-Aug-2008 20:48:43 MEST